

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000423**Date Inspected:** 08-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 2330**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Xu Lu Feng & Lu Jian Ping	CWI Present:	Yes	No
Inspected CWI report:	Yes No N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes No N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes No N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes No N/A	Approved WPS:	Yes	No N/A
		Delayed / Cancelled:	Yes	No N/A

Bridge No: 34-0006**Component:** Caltrans Mock Up**Summary of Items Observed:**

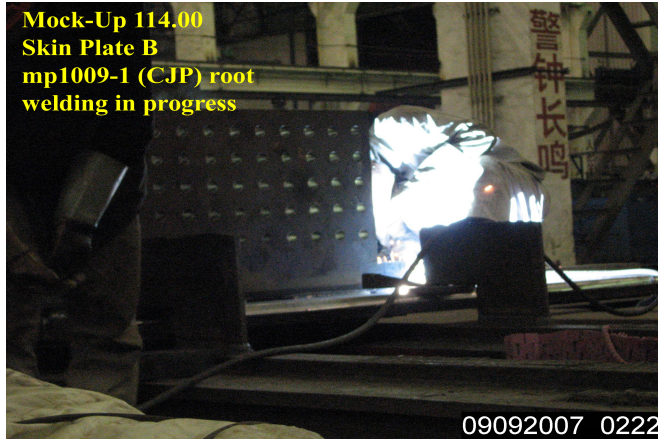
Caltrans Quality Assurance (QA) Inspector, Mike Hasler was present to observe the fitup, welding and related activities associated with the fabricating of Caltrans Mock-up, 77.00, 89.00 and 114.00, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Item	Description	WBS	Dwg No.	Status
1	Skin Plate B (Lower Section)	NA	NA	Work In Progress

Mock-Up 114.00, skin plate B Assembly (Lower Section): Caltrans QA Inspector observed flux cored arc welding (FCAW) in progress at stiffener plate, mp1006-1 and mp1009-1 to skin plate MA102. The weld joints are identified as MUSA-MA102-3, 4, 5, 6, 7 and 8, complete joint penetration (CJP) and partial joint penetration (PJP), double bevel T-joint. The welder is observed welding root pass weld in the horizontal position and chipping and wire brushing during interpass weld cleaning. The approved welder is identified as Mr. Heng Feng, welder stamp 066421. The welder is using welding procedure specification WPS-B-T-2232-TC-U5-F, Revision 1 and WPS-B-T-2332-TC-P5-F, Revision 0. Caltrans QA observed ZPMC Quality Control (QC) Certified Welding Inspector (CWI) Mr. Lu Jian Ping and Bureau Veritas inspector, Mr. Li Gang monitoring welding activities at the workstation. Caltrans QA measured current welding parameters at approximately 290 amps, 29 volts and 240 millimeters per minute (mm/min) travel speed. Preheat and interpass temperatures were verified during welding activities. The preheat temperature prior to the start of welding measures more than 110 Celsius (230 degree Fahrenheit) but less than 232 Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. FCAW welding consumable is verified and identified as Supercored 71H, classification E71T-1, diameter 1.4 mm (.055 inches). Following digital picture illustrates welding in progress.

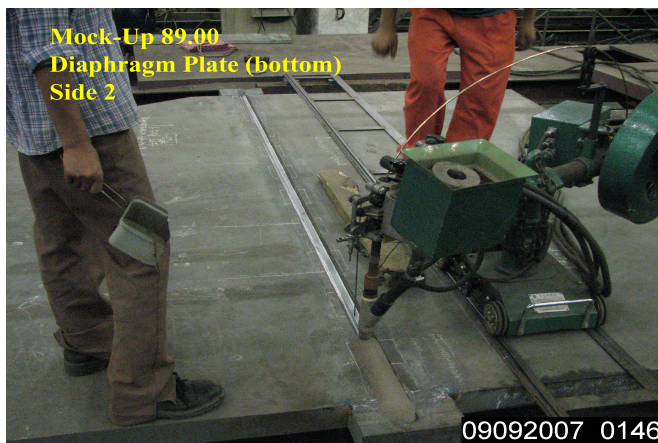
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- 2 Diaphragm Plate (bottom) NA NA Work In Progress

Mock-Up 89.00, Diaphragm (bottom plate): Caltrans QA Inspector observed submerged arc welding (SAW) in progress at plate splice weld, piecemark, P213 to P1235. The welder operator is observed welding a complete joint penetration (CJP) fill pass weld in the flat position. The assembly was then partially welded out from one side and then flipped over and welded from the other side, per fabrication procedure, welding sequence requirement. The welder is identified as Mr. Wu Zhi Bin, welder stamp 048904. The welder is using welding procedure specification WPS-B-T-3221-B-U3c-S, Revision 1. Caltrans QA measured current welding parameters at approximately 610 amps, 30 volts and travel speed, 460 millimeters per minute (mm/min). Preheat and interpass temperatures were verified during welding activities. Preheat temperature prior to the start of welding measures more than 180 degrees Celsius (350 degree Fahrenheit) but less than 232 degrees Celsius (450 degrees Fahrenheit) during maximum interpass temperature verification. SAW consumables were verified and identified as LA85, classification ENi5, diameter 4.8 mm (.189 inches) electrode and, Mil800-HPNi, classification F9A4 flux. Following digital picture illustrates welding in progress.



- 3 Mock-Up 114.00, Skin Plate B NA NA ZPMC MT

Caltrans QA Inspector witnessed ZPMC QC nondestructive (NDT) technician, Mr. Cai Xin Xin perform magnetic particle testing (MT) and Visual Testing (VT), at mock-up 114.00 skin plate B. The testing was performed on stiffener plate, mp1009-1, mp1006-1 to skin plate MA102, weld number MUSC-MA102-4, 5, 7 and 8, root pass weld. ZPMC inspection coverage appeared to be one-hundred percent of the weld, 535 mm in length. The testing appeared to be in general conformance with AWS D1.5 2002 requirements. At the conclusion of the MT testing, QC-MT nondestructive technician, Mr. Cai Xin Xin reported that root pass welds were found acceptable. Following digital pictures illustrate MT in progress.

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- 4 Mock-Up 114.00, Skin Plate B NA NA Caltrans MT
- The Caltrans QA Inspector performed visual test (VT) and MT examinations at mock-up 114.00 skin plate B, The testing was performed on stiffener plate, mp1009-1, mp1006-1 to skin plate MA102, weld number MUSC-MA102-4, 5, 7 and 8, root pass weld, with one-hundred percent inspection coverage of the weld. See Caltrans Magnetic Particle Test Report, TL6028, generated on this date for additional information.

Summary of Conversations:

As identified within the contents of this report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Hasler, Mike	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
